# Grief

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# Definition

- Grief is considered a natural response to a death or loss of a loved one, whether that be a spouse, family member, pet or friend
- Grief combines the emotions of anger, sadness, fear and guilt into one emotion
- Causes an individual to have physiological distress, disruptions of the immune system, anxiety, and depression

# Real-life Scenarios

- Individuals who experience grief go through the 5 stages of grief: denial, anger, bargaining, depression, and acceptance
- When a person is experiencing grief, they have more than likely experienced a death or loss of a family member, friend, or pet
- Loss could also be considered a major life change, such as divorce, moving, or loss of job
- Grief can also be experienced before the loss or death of a loved one, such as a bad medical diagnosis

# Brain Regions and Neural Pathways

- In a study using fMRI scans, the regions that were activated were the dorsal anterior cingulate cortex, insula, as well as the posterior cingulate cortex (Gundel, et al. 2003)
- The dorsal anterior cingulate cortex and insula are usually activated together when examining physical and social pain
- The posterior cingulate cortex is activated with the help of environmental stimuli, such as emotional memories

# Neurotransmitters and Hormones

- Due to grief causing a stress-like response in the physiological systems, we are shown that the dopamine, opioid, and oxytocin systems are activated
- Dopamine is a neurotransmitter that helps us with the motivation to seek rewards, and conditions us to form an attachment for that reward
- Opioid is a neurochemical that goes hand-in-hand with the dopamine system, as it helps us feel the enjoyment of these rewards
- Oxytocin is a hormone that helps suppress anxiety during stressful situations

# References


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